

REMARKS

Claims 1, 3-4, 6-8, 11, 13-14, 16-17, 19, 21-22, 24-26 and 28 were examined in the Office Action mailed September 24, 2007, with claims 29-39 standing withdrawn pursuant to Election/Restriction Requirement.

The following objections and rejections are pending:

- The listing of references in the Specification is objected to as not a proper information disclosure statement.
- The drawings were objected to as faint and difficult to read, and for not marking Fig. 1 as prior art.
- Claims 1, 3-4, 6-8, 11, 13-14 16-17, 19, 21-22, 24-26 and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,061,213 to Davy ("Davy") in view of reissued U.S. Patent No. Re 29,509 to Pauwels, *et al.* ("Pauwels").

1. The Disclosure Objection Is Being Addressed. The Applicants appreciate the Examiner's helpful comment regarding consideration of references. The Specification lists a single document, German patent publication DE 40 32 886 A1. This document is being concurrently submitted herewith under an appropriate Information Disclosure Statement.

2. The Drawing Objections Are Being Addressed. The Applicants have prepared formal drawings to address the issued identified by the Examiner, including the labeling of Fig. 1 as "Prior Art." Approval of the replacement drawing sheets is respectfully requested.

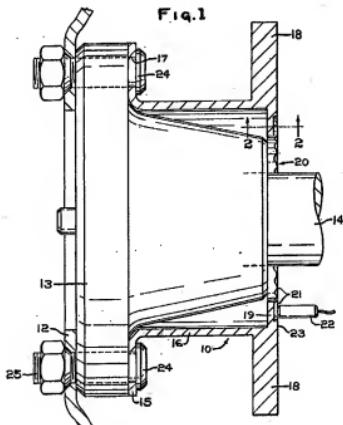
3. The Claims Have Been Further Amended. The Applicants have amended the independent claims to more particularly recite the arrangements of the present invention.

As previously noted, by locating the sensor exciter on an inboard extension of the brake rotor neck, the present invention eliminates prior art cooling and sensor clearance issues in the particularly confined environment of the wheel, hub and axle of commercial vehicle axles. As noted in paragraph [0005] of the present Specification, in order to overcome these problems, "it is an object of the present invention to provide a sensor arrangement for use with an air disc brake wherein the ABS sensor is located axially inboard of the brake rotor, and *the ABS sensor exciter is located outside the region of the inner diameter of the brake rotor hub.*" (emphasis added).

The pending independent claims have been amended, both to eliminated unnecessary words, and to recite that the sensor exciter is located on an extension of the neck portion of the brake rotor "which extends axially from a junction of a friction portion of the brake rotor and the neck portion toward a longitudinal center of the vehicle axle without contact with the friction portion, the neck extension extending toward the longitudinal center to at least a surface of the friction portion of the brake rotor closest to the longitudinal center, and the neck extension is separated by an air gap from at least a portion of the friction portion."

The Davey reference is cited as teaching "an extension of the neck portion of the brake rotor which extends *axially* from the junction of the friction portion and the neck portion toward a longitudinal center of the vehicle axle." September 24, 2007 Office Action at 4 (emphasis added).

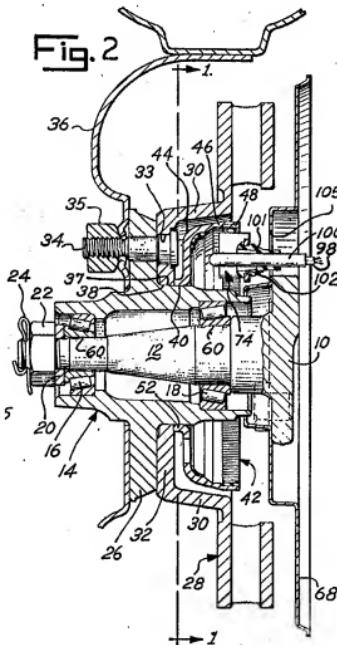
As shown in Davey Fig. 1, the sensor exciter is not located on an axial extension of the neck portion 16, but on a *radially-inward-extending* portion 19 of the *friction* portion 18 – *i.e.*, not "an extension of a *neck* portion of the brake rotor which extends *axially* from a junction of a friction portion of the brake rotor and the neck portion toward a longitudinal center of the vehicle axle."



Moreover, being integrally formed with the friction portion, the Davey exciter is both recessed away from the inboard face of the friction portion 18 (and thus does not extend toward the longitudinal center "to at least a surface of the friction

portion of the brake rotor closest to the longitudinal center), and does not extend axially from the junction "without contact with the friction portion." Finally, as noted in the Office Action, the Davey exciter arrangements do not disclose or suggest the claimed neck extension "separated by an air gap from at least a portion of the friction portion."

The Pauwels reference does not cure the deficiencies of Davey. As shown below, Pauwels discloses a wheel speed sensor which is completely separate from



the brake rotor; "cylindrical flange 46" is mounted directly on hub 14.

Pauwels is cited as teaching "a disc brake with a ventilated rotor 28, wherein there is an air gap between the junction of the friction portion 28 and the neck portion 20 [sic, 30] toward a longitudinal center of the vehicle axle." Office Action at

4. Pauwels does not, however, provide any teaching or suggestion to cure Davey's lack of teaching of an *axial* extension of the neck portion, *i.e.*, "an extension of a neck portion of the brake rotor which extends axially from a junction of a friction portion of the brake rotor and the neck portion toward a longitudinal center of the vehicle axle." Pauwels also does not teach or suggest an extension which extends "to at least a surface of the friction portion of the brake rotor closest to the longitudinal center; indeed, Pauwels reflects the existing problems with sensors being subjected to high heat near the hub, as its exciter and sensor are recessed deeply within the brake rotor envelope. Finally, nothing in Pauwels teaches or suggests a neck extension which extends axially from the rotor's neck/friction portion junction "without contact with the friction portion" – Pauwels in fact suggesting nothing with respect to alteration of a conventional brake rotor.

In sum, one of ordinary skill in the art in possession of the Davey and Pauwels references would have seen only the possibility of using Pauwels ventilated disk with Davey's radially-oriented exciter – a combination which still would have left the Davey exciter at the end neck junction, well recessed into the brake rotor envelope. Thus, in the absence of any suggestion for the present invention's axially

extending neck extension (or the other features not disclosed or suggested by Davey), no combination of these references would result in the present invention. Accordingly, the pending claims are patentable over Davey and Pauwels under § 103(a). Reconsideration and withdrawal of the rejection of claims 1, 3-4, 6-8, 11, 13-14 16-17, 19, 21-22, 24-26 and 28 is respectfully requested.

CONCLUSION

IN view of the foregoing amendments and remarks, the Applicants respectfully submit claims 1, 3, 4, 6-8, 11, 13-14, 16-17, 19, 21-22, 24-26 and 28 are in condition for allowance. Early and favorable consideration, and issuance of a Notice of Allowance for these claims is respectfully requested.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

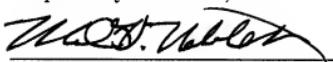
If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-

Ser. No. 10/792,216
Atty. Dkt. No. 011351.52875US
PATENT

1323 (Docket #011351.52875US).

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